

**REMARKS**

Claims 1-20 are pending in this application. Claims 1-20 stand rejected. By this Amendment, claims 1 and 2 have been amended. The amendments made to claims 1 and 2 do not alter the scope of these claims, nor have these amendments been made to define over the prior art. Rather, the amendments to claims 1 and 2 have been made to improve the form thereof. In light of the amendments and remarks set forth below, Applicant respectfully submits that each of the pending claims is in immediate condition for allowance.

Paragraph 1 of the Office Action rejects claims 1, 3, 10, and 12 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,283,568 (“Horii”) in view of U.S. Patent No. 6,145,949 (“Takahashi”). Applicant respectfully traverses this rejection.

The Office Action combines Horii and Takahashi in an attempt to disclose all of the limitations in Applicant’s claims. The Office Action states that one skilled in the art would modify Horii’s composite signal such that the drive waveform signals are uniform at certain temperature degrees as disclosed by Takahashi. Applicant asserts that, even if one were to take from Takahashi the teaching that controlling the drive voltage by using different waveforms which vary by temperature resulting in constant recording density at various temperatures, one would not arrive at Applicant’s explicitly claimed invention. To implement the constant recording density taught by Takahashi in Horii, it is not necessary to use a uniform drive waveform as explicitly recited in Applicant’s. In Horii, different portions of the composite waveform would be used to achieve the desired result. As

such, if one were to take Takahashi's teaching and combine it with Horii, one would merely have a composite drive waveform signal which will vary as temperature varies. One skilled in the art would not have utilized the uniform drive waveform signal explicitly recited in Applicant's claim. Thus, even if one were to combine the teaching regarding the drive waveform in Takashi with the apparatus taught in Horii, the result would be the varying of Horii's composite signal, not the inclusion of a uniform signal. As such, Applicant respectfully asserts that even if the combination were made, the combination does not teach Applicant's explicitly recited limitations. Therefore, Applicant respectfully submits that the claims are allowable over the cited references.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or combine references to arrive at the claimed subject matter. The prior art references must also teach or suggest all the limitations of the claim in question. See, M.P.E.P. § 706.02(j). A reference can only be used for what it clearly discloses or suggests. See, In re Hummer, 113 U.S.P.Q. 66 (C.C.P.A. 1957); In re Stencel, 4 U.S.P.Q.2d 1071, 1073 (Fed. Cir. 1987). Here, the references, whether taken individually or in combination, do not disclose or suggest the invention claimed by the Applicant.

To properly reject the Applicant's claims for obviousness in view of a combination of prior art references, the Office Action must establish that a person of ordinary skill in the art would have been motivated to combine the cited references and, in combining them, would have arrived at the invention claimed by the

Applicant. In re Kotzab, 208 F.3d 1365, 1370 (Fed. Cir. 2000). A motivation to combine may arise from: (i) either explicit or implicit statements in the prior art references themselves; (ii) the knowledge of those of ordinary skill in the art that certain references, or disclosures in those references, are of special interest or importance in the field; or (iii) the nature of the problem to be solved. Ruiz v. A.B. Chance Co., 234 F.3d 654, 665 (Fed. Cir. 2000).

Regardless of its source, or the form that it takes, a motivation to combine must be clearly and particularly shown. In re Dembiczak, 175 F.3d 994, 999-1000 (Fed. Cir. 1999). The Federal Circuit has held that a motivation to combine is not shown by the mere assertion that the claimed invention would have been obvious to one of ordinary skill in the art simply because it is a combination of elements that were known at the time of the invention:

[T]here is no basis for concluding that an invention would have been obvious solely because it is a combination of elements that were known in the art at the time of the invention. See, Fromson v. Advance Offset Plate, Inc., 755 F.2d 1549, 1556, 225 USPQ 26, 31 (Fed.Cir.1985). Instead, the relevant inquiry is whether there is a reason, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the references, and that would also suggest a reasonable likelihood of success. See, e.g., In re Dow Chem. Co., 837 F.2d 469, 473, 5 USPQ2d 1529, 1531-32 (Fed.Cir.1988).

Smiths Indus. Medical Systems Inc. v. Vital Signs, Inc., 183 F.3d 1347, 1356 (Fed. Cir. 1999); see also In re Dembiczak, 175 F.3d at 999-1000 (Fed. Cir. 1999).

The Office Action's sole justification for combining Horii and Takahashi is precisely the sort of assertion that the Federal Circuit rejected in Smith. The Office Action admits that Horii does not disclose uniform drive waveform signals. The Office Action then includes Takahashi to disclose piezoelectric actuators driven by uniform drive waveform signals "to secure constant recording density at various temperatures." The Office Action asserts that "it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the drive waveform signals in the printing device disclosed by Horii, et al. such that the drive waveform signals are uniform at certain temperature degrees as disclosed by Takahashi. The motivation of doing so is to secure constant recording density at various temperatures as taught by Takahashi (abstract)." See Office Action at 3. Thus, there is no motivation to combine the drive waveform in Takashi with the apparatus taught in Horii. As such, Applicant respectfully asserts that the combination does not teach Applicant's explicitly recited limitations. Therefore, Applicant respectfully submits that the claims are allowable over the cited references.

In summary, the Office Action fails to establish with clarity and particularity that a person of ordinary skill in the art would be motivated to change Horii in light of Takahashi. As a result, the Applicant respectfully submits that the Office Action fails to establish a *prima facie* case of obviousness with respect to claims 1, 3, 10, and 12, and that the objection to those claims under Section 103 should be withdrawn.

To establish a *prima facie* case of obviousness, the prior art references must also teach or suggest all the limitations of the claim in question. See, M.P.E.P.

§ 706.02(j). A reference can only be used for what it clearly discloses or suggests. See, In re Hummer, 113 U.S.P.Q. 66 (C.C.P.A. 1957); In re Stencel, 4 U.S.P.Q.2d 1071, 1073 (Fed. Cir. 1987). Here, the references, whether taken individually or in combination, do not disclose or suggest the invention claimed by the Applicant.

Each of Applicant's independent claims explicitly recite that the waveform generating means generates a different plurality of uniform drive waveform signals for adjacent scans. None of the cited references disclose this explicitly recited feature. In each of the cited references, the waveform generating means is constantly producing all of the possible waveforms. Selecting means are then used to select the various signals to output the desired waveform during each scan. This is unlike Applicant's explicitly recited claim limitation.

In Horii, each of the waveform segments 145-1 through 145-n are constantly generated by the drive waveform generator 142. The waveform selector 141-1 through 141-n then selects the various segments of the drive waveform desired to produce the overall composite waveform. However, Horii does not disclose generating a different plurality of drive waveform signals for each adjacent scan.

The Shimada reference is similar to Horii in its operation. In Shimada, a waveform generation unit 51 outputs the driving waveform W1 and W2 in Figure 7 and a waveform selection unit 55 selects a driving waveform in response to the signal from transfer buffer 47. Thus, the selected driving waveform is output to the ink spout head. It should be noted that in Shimada as in Horii, the drive waveforms are always produced for each scan and there is never a time when different uniform

drive waveform signals are produced for each adjacent scan. Thus, Shimada also fails to disclose Applicant's explicitly recited invention.

Finally, Takahashi is also silent as to the explicitly recited limitation of waveform generation means generating a different plurality of uniform drive waveform signals for adjacent scans. In Takahashi, a stored waveform is selected based on a temperature detected by the detector. However, there is no teaching in Takahashi that different drive waveform signals are generated on each adjacent scan. Thus, Takahashi also fails to disclose Applicant's explicitly recited invention.

Because the references, whether taken individually or in combination, do not disclose each and every limitation recited in Applicant's claim, in particular, those discussed above, Applicant respectfully requests that independent claims 1, 2, 10, and 11 be allowed.

Claims 3-9 either directly or indirectly depend from, and contain all the limitations of claim 1. These dependent claims also recite additional limitations which, in combination with the limitations of claim 1, are neither disclosed nor suggested by the cited references and are also believed to be directed towards patentable subject matter. Thus, claims 3-9 should also be allowed.

Claims 12-20 either directly or indirectly depend from, and contain all the limitations of claim 10. These dependent claims also recite additional limitations which, in combination with the limitations of claim 10, are neither disclosed nor suggested by the cited references and are also believed to be directed towards patentable subject matter. Thus, claims 12-20 should also be allowed.

Applicant has responded to all of the rejections and objections recited in the Office Action. Reconsideration and a Notice of Allowance for all of the pending claims are therefore respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

If the Examiner believes an interview would be of assistance, the Examiner is welcome to contact the undersigned at the number listed below.

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Respectfully submitted,

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